



# SMOG CHECK ADVISORY

Official Publication of the California Department of Consumer Affairs/Bureau of Automotive Repair November 1999

## Special Menu Option Allows Data Entry for Repairs on Vehicles That Can't Be Certified

Technicians may not be aware that BAR-97 Emission Inspection Systems (EIS) have a menu option that allows them to enter repair data even when they are prohibited from certifying vehicles they have repaired, such as those that must be certified at a Test-Only station.

"Repair data must be entered into the EIS any time an emissions-related repair is performed on a vehicle that has failed a Smog Check or is repaired prior to performing a Smog Check," according to BAR's Research Analyst Dr. Stephen Gould.

BAR needs the repair data to determine repair effectiveness and collect cost data. If a shop is prohibited from certifying a vehicle it has repaired, the repair data can still be entered into the BAR-97 EIS. (BAR-90s do not have this option.) Each EIS manufacturer has a somewhat different method for entering the repair data for vehicles in these categories. So, here's how to use the "Repair Only" menu options of each TAS manufacturer:

### ESP BAR-97 EIS

From the MAIN MENU:

- Select REPAIR ONLY FUNCTIONS.
- Select CREATE NEW REPAIR RECORDS.
- Enter technician license and access code.
- Enter the vehicle's VIN/license number.
- Enter repair data (i.e., what components were repaired, diagnosed, etc.?)
- Enter cost data.
- Save the data. It will automatically be sent to the Vehicle Information Database (VID) prior to exiting the repair menu.

(See **Data Entry**, page 5)

## COUNTDOWN TO FEBRUARY 2000

The following list of tips and advice from BAR staff and other sources will be included in each edition of the *Smog Check Advisory* over the next several months. For some they will be new, and for others they will serve as reminders. They may change and new tips may be added. All are intended to help stations and technicians improve their performance and strengthen California's Enhanced Smog Check Program report card to the USEPA in February.

- Be sure to report pre-inspections — the data must be entered into the Test Analyzer System (TAS) under "Q-Mode" on BAR-97 and "P-Mode" on BAR-90.
- Abort tests only for the reasons detailed in the Smog Check Inspection Manual (e.g., oil leak, engine noise, etc.).
- Do not abort tests by using the reset switch on the analyzer to avoid failing the consumer's vehicle. It is an improper test procedure and the consumer did not authorize such action (i.e., he or she asked for a Smog Check inspection).
- Replacing gas caps before testing is acceptable as long as this action is entered into the TAS as a repair.
- Complete tailpipe repairs averaged about \$300 during the Sacramento Prototype Enhanced Program, our statistical guys are telling us. Stations need to enter all repair costs charged to customers. If not, comparison to the prototype program will be inaccurate. Does your station perform complete and effective diagnostic and repair service?
- Catalytic converters should not be replaced until an engine performance diagnosis is performed and the appropriate repairs are completed. Remember, even after computer controlled systems are operating to specification, a catalytic converter diagnosis should be performed before replacing the "CAT."
- Enter vehicle odometer readings as instructed by the TAS: Enter the data exactly as shown on the vehicle's odometer; do not adjust for odometer rollover. That adjustment is made by BAR through internal analysis. Incorrect entries can cause problems for your customers if they have to prove actual mileage to insurance companies for best rates.
- NEVER, NEVER clean-pipe a car. Don't think that vague management of your shop's employees will serve as a mitigating factor in a case to revoke your shop's licenses — important advice brought to you by BAR's Enforcement Division.

## TAS Manufacturers Required to Verify Repairs With Secondary Gas Audit

Under procedures jointly developed by BAR and Test Analyzer System (TAS) manufacturers, a secondary gas audit must be performed on all analyzers to verify that the repairs corrected the audit failure.

"Our audit representatives will not accept a repair invoice as validation that the gas audit failure has been corrected unless there is additional documentation showing that a gas audit was conducted and what the specific calibration readings were," said BAR's Smog Check Enforcement Manager Mike Vanderlaan.

"If manufacturers fail to conduct the gas audit and provide the calibration readings, analyzers will be locked out, and stations could suffer a prolonged period of downtime."

Vanderlaan advised station owners and managers to take action to prevent lockouts. "Stations should remind their manufacturers to bring the appropriate gas audit equipment to the service call," he said. "And after the repairs have been made, station managers should make certain they have the documentation showing the specific calibration readings."



# SNAPSHOT

Here are the Smog Check testing statistics for the months of August and September 1999. As always, the data includes Acceleration Simulation Mode (ASM), Two-Speed Idle (TSI) tests, and certificates issued for all tests performed. Remaining data is for first tests. We have changed the format slightly and are now showing the data between Enhanced and Basic/Change of Ownership (COO) Areas of the state.

	AUGUST	SEPTEMBER
<i>Program Volume</i>		
Tests Conducted	1,008,740 *	966,173 *
Vehicles Tested	844,357	814,103
Enhanced	539,732	523,179
Basic/COO	304,805	290,924
Vehicles Failed	88,440 (10.5%)	84,177 (10.5%)
Enhanced	69,123 (12.8%)	65,995 (12.6%)
Basic/COO	19,277 (6.3%)	18,182 (6.3%)
Certificates Issued	869,467	833,495
<i>Type of Failure</i>		
Tailpipe:	64,799 (7.6%)	60,707 (7.5%)
Enhanced	52,072 (9.6%)	49,635 (9.5%)
Basic/COO	11,727 (3.9%)	11,072 (3.8%)
Gross Polluters	20,939 (2.5%) **	19,774 (2.4%) **
Enhanced	52,072 (2.9%)	15,032 (2.9%)
Basic/COO	11,727 (1.7%)	4,742 (1.6%)
Visual	19,057 (2.3%)	18,049 (2.2%)
Enhanced	15,590 (2.9%)	14,810 (2.8%)
Basic/COO	3,467 (1.1%)	3,239 (1.1%)
Functional	44,008 (5.2%)	42,117 (5.2%)
Enhanced	32,525 (6.0%)	31,152 (6.0%)
Basic/COO	11,483 (3.8%)	10,965 (3.8%)
<i>Failure by Station Type</i>		
Test & Repair		
Enhanced	25,753 (9.0%)	25,208 (9.0%)
Basic/COO	10,680 (5.4%)	10,361 (5.4%)
GSGR		
Enhanced	25,781 (10.2%)	12,072 (9.9%)
Basic/COO	4,448 (7.9%)	4,208 (7.9%)
GPC		
Enhanced	2,748 (12.9%)	2,455 (12.2%)
Basic/COO	3,045 (7.3%)	3,170 (7.1%)
Test-Only		
Enhanced	27,403 (26.8%)	25,908 (26.4%)
Basic	323 (14.4%)	281 (13.2%)
<i>By Type</i>		
High Emitter Profile (HEP)	18,589 (38.0%)	17,597 (37.1%)
Random 2%	1,581 (22.6%)	6,689 (24.2%)
Volunteers	7,560 (15.5%)	6,979 (15.1%)
<i>Average Reported Repair Costs</i>		
Vehicles Repaired	59,495	62,100
Average Cost (statewide)	\$ 116	\$ 120
Test & Repair Stations	\$ 96	\$ 99
GSGR Stations	\$ 106	\$ 110
GPC Stations	\$ 188	\$ 184
Repair Assistance Stations	\$ 400 *** #	\$ 420 ***
Enhanced Areas	\$ 117	\$ 122
Basic/COO Areas	\$ 114	\$ 116
<i>Consumer Assistance Program</i>		
Repair Assistance	532	608
Vehicle Retirement	131	176
Repair Cost Waivers	31	6
Economic Hardship Extensions	61	2

\* Includes multiple tests on same vehicle.

\*\* Subset of tailpipe failures.

\*\*\* Includes consumer co-pay.

# Corrected number.

# What SNAPSHOT Numbers Are Telling Us

Here is what we are learning about the performance of Smog Check stations and technicians using the numbers we have been publishing in the SNAPSHOT column. You can use the information to track your progress. As part of the Enhanced Smog Check Program analysis, current station and technician performance is compared to other data collected by BAR and from various sources, including:

- 1994 Pilot Program — a joint BAR/ARB loaded-mode vehicle emissions repair study that collected and analyzed data on the types of repairs that would be necessary in an Enhanced Smog Check Program.
- 1996 Prototype Enhanced Program — a group of 11 Sacramento-based auto repair shops pioneered the use of loaded-mode testing, diagnostic procedures, and equipment and provided detailed repair data and analysis.
- Repair Assistance Program (RAP) Stations.
- Annual Random Roadside Surveys.
- Average Repair Costs.
- Vehicle Failure Rates.

In the August *Smog Check Advisory*, we reported three data sets of most concern to BAR: 1) overall failure rate, 2) average repair costs, and 3) functional failure rates.

This month, we are analyzing the functional test failure rates reported in the September SNAPSHOT column. A total of 42,117 functional failures, or 5.2 percent, were reported. Of these functional failures, 31,152 (6 percent) occurred in the Enhanced Areas, and 10,965 (3.8 percent) occurred in the Basic and Change of Ownership Areas.

As with our other two areas of concern, station performance in this category has been statistically low, and no improvement has been made in the last three months. The percentage of functional failures that stations reported over the last three months for July, August, and September was 5.2 percent.

By comparison, data collected during BAR roadside operations show that vehicles have an overall functional failure rate of 16.5 percent.

A focus on functional repairs is critical because studies show that the most effective way to reduce emissions is by making repairs to what are called "functional" systems. In Basic and Change of Ownership Areas, functional tests are required on

the exhaust gas recirculation (EGR) system, ignition timing, fuel caps, and malfunction indicator lights. Except for the EGR system, the same tests are required in Enhanced Areas.

## Analysis

The graph below shows the failure rate by functional test category during BAR's random roadside inspections, which produced the overall 16.5 percent functional failure rate. Only a small number of timing tests (2,579) were performed, a fact which may account for the very high 22.49 percent failure rate in the ignition timing category. In addition, some functional tests were performed on EGRs, but it is important to remember that an EGR test is not part of the Acceleration Simulation Mode (ASM) test procedure for Enhanced Area stations. The graph also shows the EGR failure rate from BAR's 1993 random roadside inspections, which was 18.02 percent.

With only a 5.2 percent overall functional failure rate among stations, it appears that stations are either not conducting functional tests or are not failing vehicles in the functional test categories.

The emission reduction benefits of making functional repairs have been documented and reported in the *Smog Check Advisory* many times, with specific stories about EGR, timing, and catalytic converter diagnosis and repair (see the *Smog Check Advisory* for February

and March 1997; September, October, November 1998; and January 1999).

Repairs that produce the most benefit were identified and documented in a joint BAR and Air Resources Board (ARB) loaded-mode vehicle repair study conducted in 1994. At the top of that list was the EGR valve. Timing was number 10. Since then, fuel caps have also been identified as a significant source of emissions, and the fuel cap testing program implemented on July 1, 1999, in Basic and Change of Ownership Areas of the state, is expected to reduce emission by an estimated 1,485 tons in the first year.

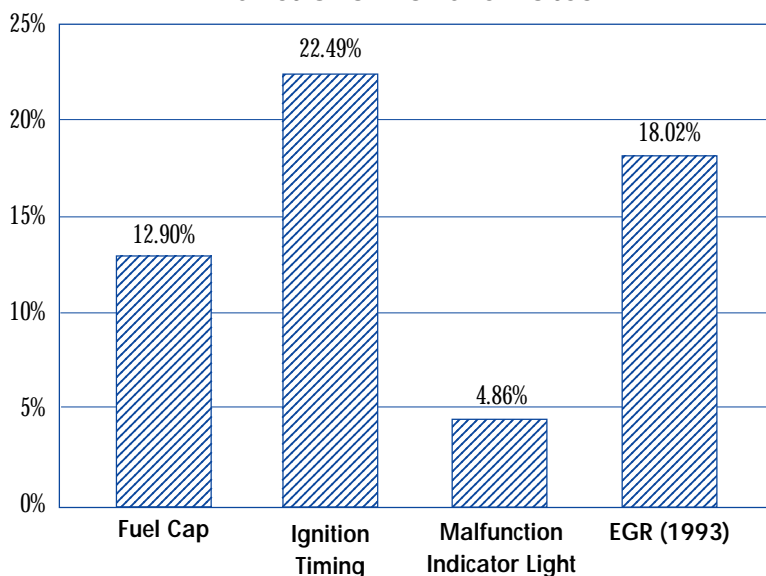
Data collected by BAR's Consumer Repair Education Workforce (CREW) also found that functional repairs produce the most emission reduction benefit. At the top of CREW's list of most important repairs was diagnosis followed by ignition timing, with EGR repair listed at number four (see March 1997 *Smog Check Advisory*).

## Conclusion

Station performance on functional repairs will be a critical element for California in its evaluation report of the Smog Check Program, which is due to the United States Environmental Protection Agency (USEPA) next February. Unfortunately, current data indicate stations are making 2/3 fewer repairs than needed to meet the USEPA emissions-reduction goals. ❖

*Next month:* Some progress on average repair costs.

**Random Roadside Survey  
Functional Failure Rates**



# SMOG CHECK STATION CITATIONS



FACILITY NAME	ADDRESS	CITY	ZIP	LEVEL	ARD NUMBER	CITATION NUMBER	ASSESS AMOUNT	ASSESS DATE	DATE MAILED
Mesa Auto Teck	1927 Rear Harbor Blvd.	Costa Mesa	92627	2	AH 168431	C-99-540	\$750	9/10/99	6/15/99
Peter Auto Repair	2286 Fairmont Avenue	San Diego	92105	1	AL 135949	C-99-542	\$250	9/20/99	6/15/99
** Mike's Unocal 76	3731 East La Palma	Anaheim	92806	1	AK 135469	C-99-556	\$250	9/24/99	6/15/99
*** Main Street Chevron	1111 Maim Street	Morro Bay	93442	1	AA 122664	C-99-604	\$250	9/20/99	6/29/99
Hanmi Auto Center	7639 Carroll Road #A	San Diego	92121	1	AM 202685	C-99-624	\$250	9/02/99	7/02/99
Family Car Care Center	320 Mississippi Avenue	Vallejo	94590	1	AK 202102	C-99-642	\$250	9/09/99	7/02/99
South Cal Smog Test Only	4645 Ruffner Street, Suite D	San Diego	92111	1	AG 200804	C-00-009	\$250	9/09/99	8/09/99
GDA Enterprise	1801 West Arrow Highway	Upland	91786	1	AA 187170	C-00-013	\$250	9/15/99	7/30/99
*** Lee's Chevron Service	390 North Lemon Avenue	Walnut	91789	1	AC 182633	C-00-019	\$250	9/10/99	7/30/99
Ramirez Auto Care	4421 East Mission Blvd.	Pomona	91766	1	AC 188041	C-00-026	\$250	9/09/99	8/12/99
Star Hi Tech Auto	609 East Arrow Highway	Pomona	91767	1	AA 182013	C-00-030	\$250	9/02/99	8/12/99
E Z Gas	120 North Vincent Avenue	Covina	91722	1	AD 117346	C-00-032	\$250	9/02/99	8/12/99
Pro Neat Smog Tune Up Brakes	750 North Nogales #1	Walnut	91789	1	AF 154463	C-00-034	\$250	9/27/99	8/12/99
Smog Pros	1589 North Orange Grove	Pomona	91767	2	AG 133451	C-00-036	\$750	9/24/99	8/12/99
The Smog Squad	3342 Rosecrans Street	San Diego	92110	1	AB 164848	C-00-038	\$250	9/27/99	8/12/99
Tierrasanta Chevron	10585 Tierrasanta Blvd.	San Diego	92124	1	AC 203751	C-00-040	\$250	9/09/99	8/12/99
Speedy Auto Tech	2950 Kurtz Street	San Diego	92106	1	AG 190153	C-00-042	\$250	9/16/99	8/12/99
** Sunnyside Unocal	2701 North Brea Blvd.	Fullerton	92635	1	AJ 174813	C-00-046	\$250	9/17/99	8/18/99
Dr. Smith Carburetors	1879 A Commonwealth	Fullerton	92833	1	AF 195212	C-00-051	\$250	9/29/99	8/18/99
Auto Chek Centers Inc.	2340 East Chapman Avenue	Fullerton	92631	1	AH 141394	C-00-053	\$250	9/09/99	8/18/99
Jarrett's Mobil	17472 Beach Blvd.	Huntington Beach	92647	1	AB 138043	C-00-057	\$250	9/02/99	8/18/99
** Ira Newman Automotive	1505 North State College	Anaheim	92806	1	AH 059321	C-00-059	\$250	9/27/99	8/18/99
Montgomery Ward #1959	7777 Edinger Avenue	Huntington Beach	92647	1	AN 022533	C-00-062	\$250	9/08/99	8/18/99

\* Stations that have had their Gold Shield Guaranteed Repair (GSGR) certification withdrawn.

\*\* Stations that have had their Gross Polluter Certification (GPC) Pilot authority withdrawn.

\*\*\* Stations that have had their GPC and Repair Assistance Program (RAP) authority withdrawn.



## The Bottom Line as of October 1, 1999



<b>108</b>	Cut score on the current smog exam.
<b>66.74</b>	Percent of technicians passed EA Smog Check exam in September.
<b>7,954</b>	Technicians completed BAR-97 eight-hour Transition Training.
<b>8,792</b>	Advanced (EA) technicians licensed.
<b>4,473</b>	Basic (EB) technicians licensed.
<b>4,849</b>	Test & Repair Stations statewide.
<b>1,911</b>	Gold Shield Guaranteed Repair (GSGR) stations statewide.
<b>349</b>	Gross Polluter Certification (GPC) stations statewide.
<b>360</b>	Test-Only stations statewide.
<b>479</b>	Test-Only lanes statewide.
<b>88</b>	GPC stations participating in the Repair Assistance Program (RAP).
<b>2,188</b>	Vehicles repaired under RAP.
<b>17</b>	Dismantlers participating in the Vehicle Retirement Program (VRP).
<b>918</b>	Vehicles retired under VRP.



## New Smog Check Technician Exams Being Developed

New Basic and Advanced Smog Check technician exams are being developed and are expected to be in use starting in November 2000, according to BAR's Standards and Training Manager George Adelsperger.

The Advanced exam will include diagnosis and repair of loaded-mode failures.

"We have already interviewed about a dozen technicians, and we will be mailing surveys to 2,000 technicians asking them to identify the most important aspects of their jobs," he said. The surveys will be mailed to technicians selected randomly using the mailing address in the license file.

"After we receive those results, we'll develop plans ("blueprints") for new questions and assemble the new exams."

In addition, BAR and the Department of Consumer Affairs Office of Examination Resources will hold approximately 25 two-day workshops with licensed technicians to develop the exams. Technicians participating in the exam development workshops will be paid for their time and travel expenses. BAR representatives will call technicians at their workplaces to invite them to the workshops.

To be eligible to participate in the workshops, technicians must be currently licensed with a "clear" status (i.e., no unpaid citations or current disciplinary actions).

Technicians interested in participating in the workshops can write to BAR. Be sure to include your name, license number, and daytime phone number. Mail, fax, or e-mail (with the word *workshop* as the subject) this information to the following:

Bureau of Automotive Repair  
Standards & Training Branch  
10240 Systems Parkway  
Sacramento, CA 95827  
Fax: (916) 255-4352  
E-mail: [standardstraining@dca.ca.gov](mailto:standardstraining@dca.ca.gov)

## Data Entry *(continued from page 1)*

### Snap-On BAR-97 EIS

From the MAIN MENU:

- Select REPAIR ONLY SOFTWARE FUNCTION.
- Select CREATE NEW REPAIR RECORDS.
- Enter technician license and access code.
- Enter the vehicle's VIN/license number.
- Answer the following prompts:
  - Were any emissions related repairs performed prior to the start of the inspection?
  - Were the repairs performed at your shop?
  - Did you perform the repairs?
  - Were any of the repairs performed at your shop the result of a tampered emission system?
- Enter repair data (i.e., what components were repaired, diagnosed, etc.).
- Enter cost data.
- Save the data. It will be sent to the VID during the next analyzer communication (i.e., next Smog Check, Data File Refresh, etc.).

### SPX BAR-97 EIS

From the MAIN MENU:

- Select REPAIR ONLY SOFTWARE MENU.
- Select CREATE NEW REPAIR RECORDS.
- Enter technician license and access code.

- Enter the vehicle's VIN/license number.
- Answer the following prompts:
  - Were any emissions related repairs performed prior to the start of the inspection?
  - Were the repairs performed at your shop?
  - Did you perform the repairs?
  - Were any of the repairs performed at your shop the result of a tampered emission system?
- Enter repair data (i.e., what components were repaired, diagnosed, etc.).
- Enter cost data.
- Save the data. It will automatically be sent to the VID prior to exiting the repair menu.

### Worldwide BAR-97 EIS

From the MAIN MENU:

- Select REPAIR ONLY SOFTWARE.
- Select CREATE NEW REPAIR RECORDS.
- Enter technician license and access code.
- Enter the vehicle's VIN/license number.
- Enter repair data (i.e., what components were repaired, diagnosed, etc.).
- Enter cost data.
- Save the data. It will automatically be sent to the VID prior to exiting the repair menu. ♦

## 1999 Calendar of Coming Events



### NOVEMBER

- 4, 9, 11** Automotive Service Excellence (ASE) Tests
- 11** Veterans Day — State Holiday
- 25-26** Thanksgiving — State Holiday

## New Procedures to Help Speed License Renewals

License renewal notices are being sent to Smog Check stations approximately eight weeks prior to the station's expiration date under new procedures developed by the Department of Consumer Affairs Licensing Division.

"Since renewals are not part of an automated process, station owners should allow at least four to six weeks for the licenses to be processed manually," said Licensing Division Chief Terri Cia. "It is illegal to operate with an expired license, and timely renewal will avoid a citation, fine, or lockout." ♦





State of California  
Gray Davis, Governor  
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Patrick Dorais, Acting Chief  
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Sacramento, CA 95827

## BAR FIELD OFFICE PHONE NUMBERS

Bakersfield ..... (661) 833-6304  
Riverside ..... (909) 782-4250  
Canoga Park ..... (818) 596-4400  
Sacramento ..... (916) 255-4200  
Culver City ..... (310) 410-0024  
San Jose ..... (408) 277-1860  
Fresno ..... (559) 445-5015  
South El Monte ..... (626) 575-6934  
Fullerton ..... (714) 680-7851  
Hayward ..... (510) 785-1961  
Oceanside ..... (760) 439-0942

DCA Cashiering ..... (916) 322-7002  
DCA Licensing ..... (916) 322-4010  
ET Help Desk ..... (916) 255-4476  
MCI ..... (800) 731-SMOG  
(Then press 5 for technical support)

**Consumer Assistance and  
Referee Center ... (800) 622-7733**

**DCA HOTLINE .... (800) 952-5210**

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## Little Scoops...

- ❖ Another important BAR event began on October 4 when new cutpoints for oxides of nitrogen (NOx) testing took effect. The new cutpoints have been planned for some time and are the third in a series of NOx reductions to establish more stringent pass points to achieve the Smog Check Program's targeted emissions reduction goals. The phase-in has allowed stations and technicians to adequately prepare for increased volumes of vehicles failing their Smog Checks and needing repair (see October *Smog Check Advisory*.) Further cutpoint reductions for all pollutants — hydrocarbons and carbon monoxide, as well as NOx — are still expected.
- ❖ BAR's Service Delivery Systems has a new, more appropriate name. It is now called the "Consumer Assistance Program (CAP)"

and, just as the new name implies, is designed to help consumers successfully complete Smog Check testing and repairs, putting a "cap" on their post-Smog Check inspection expenditures. Both the Repair Assistance and Vehicle Retirement Programs are included in CAP. Consumers may call our Consumer Hotline toll-free at 800-952-5210 for a CAP application.

- ❖ Reports from field representatives show that stations that do not have service contracts with their equipment manufacturers receive lower service priority when repairs are needed. That could make it tough to get equipment repaired in time to prevent a lockout in the event a station fails a QA audit. And as a reminder, a service contract is a required element of the BAR-97 specifications.

- ❖ Phase II of the Gross Polluter Certification (GPC) Program is expected to begin in January 2000. (see October *Smog Check Advisory*.) GPC stations are eligible to participate in the Repair Assistance Program.
- ❖ The Quality Assurance (QA) audits are continuing at all Smog Check stations statewide. Stations can improve their performance during a QA inspection by replacing dirty emission analyzer filters and damaged sample hoses and probes on a regular basis.
- ❖ As readers have probably already noticed, BAR's website has had a face lift, which was unveiled on October 12. The new look is designed to make things easier to find. In addition, the website is now connected to the Department of Consumer Affairs Internet system.